A REVIEW OF THE LOUISIANA SPECIES OF *COLASPIS* (COLEOPTERA: CHRYSOMELIDAE)

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ABSTRACT

The species of *Colaspis* that occur in Louisiana were studied. *Colaspis louisianae* Blake, not *C. brunnea* (F.) as has been previously thought, is the most common species on field crops in the state. Geographic and seasonal distribution and some host information are given for these 2 species as well as for *C. costipennis* Crotch, *C. crinicornis chittendeni* Blake, *C. favosa* Say, *C. flavocostata* Schaeffer, *C. lata* Schaeffer, *C. pini* Barber, and *C. recurva* Blake.

The costate species of *Colaspis* in the United States were revised by Blake in 1974. She reported that 7 species of this group occurred in Louisiana including the grape colaspis, *C. brunnea* (F.), the pine colaspis, *C. pini* Barber, and 5 species that are very similar to these. In 1977 she published a review of some of the blue green species of this genus and reported that *C. favosa* Say was collected in Louisiana. Research was conducted by the author from 1976 to 1978 to study the species that occur in the state, with an emphasis on those that are of economic importance. Eight species were identified. *Colaspis lata* Schaeffer was not collected during this study, and the only Louisiana record is from Covington in St. Tammany Parish (Blake 1974). The names of two vectors of bean pod mottle virus in Louisiana (Horn et al. 1970) are changed because the species involved had not been described at the time that paper was published.

For several species the most reliable diagnostic characters are found in the male aedeagus (Blake 1974). Intraspecific variation in size, shape, color, and prominence of elytral costae made identification of females difficult. This was true of *C. brunnea* and *C. louisianae* Blake, *C. crinicornis chittendeni* Blake and *C. lata,* and *C. flavocostata* Schaeffer and *C. recurva* Blake. As more specimens become available for study and more information is accumulated on geographic distribution and host preferences, this situation may change.

Males have the first segment of the front and middle tarsi enlarged. The apical margin of the last visible abdominal sternum is straight. This segment bears a pronounced median tubercle in *C. recurva* and *C. flavocostata* and a slight one in *C. brunnea, C. crinicornis chittendeni,* and *C. louisianae.* *Colaspis costipennis* Crotch, *C. favosa, C. lata,* and *C. pini* lack this tubercle. In females the first tarsal segments are the same size. The apical margin of the last sternum is rounded with a shallow or deep median emargination with or without a minute median denticle.

Adults of this genus apparently remain in the teneral condition for some time, and the aedeagus of such males is not satisfactory to use for identification. Females appeared to be more common in collections, and large series were collected when possible to insure that both sexes were included. Specimens were allowed to dry in petri dishes. Males collected in a teneral condition had shrunken abdomens and were not dissected unless they represented the only males in a series.

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In the discussions below I present host data that are in addition to that given by Mrs. Blake (1974, 1977). Complete Louisiana distribution is given, and the localities from Mrs. Blake's papers are marked with an asterisk.

Colaspis louisianae Blake: This species was described from specimens collected on corn, cotton, fuchsia, rose, soybean, string bean, and turnip in 11 Louisiana localities. In addition to the host plants recorded by Mrs. Blake (1974), I have seen specimens from alfalfa, *Desmanthus illinoensis* (Michx.) MacM., *Desmodium* sp., dock, red clover, and rice. A few were collected in light traps, boll weevil sex attractant traps, and *Heliothis* pheromone traps. The beetles I examined were collected from May 17 to September 25 in 21 parishes. The parish records follow: Acadia*, Assumption*, Avoyelles, Bossier, Cameron, East Baton Rouge*, East Carroll, East Feliciana, Evangeline, Franklin, Iberia*, Iberville*, Lafayette*, Lafourche, Madison, Rapides, St. Bernard*, St. Charles*, St. Helena, St. Landry*, Tensas, Terrebonne*, Vermillion*, West Baton Rouge, West Carroll, and West Feliciana.

A total of 286 males, including at least one from each locality given above and dates from 1922 to 1978, were dissected and the genitalia were examined. Of this number, 251 proved to be *C. louisianae*. Therefore *C. louisianae,* not *C. brunnea* as has previously been thought, is the most common species on field crops. The two species were collected together only once in a soybean field near Bayou Duralde in Evangeline Parish on July 2, 1977. The ratio in that sample was 26 males of *C. louisianae* to 20 males of grape colaspis.

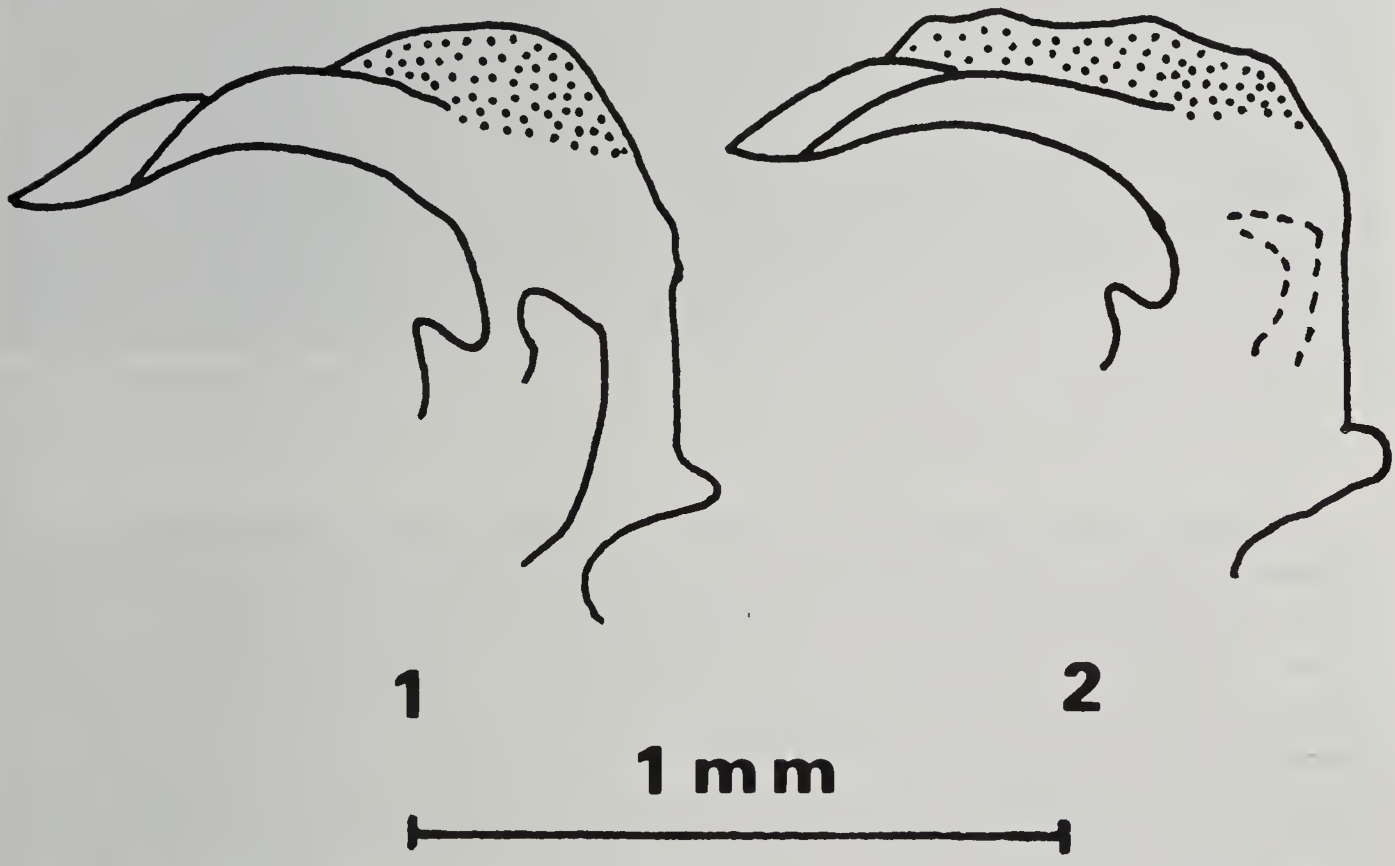
Colaspis brunnea (Fabricius): Mrs. Blake did not list Louisiana localities for the grape colaspis. The only specimens in the LSU collection prior to the present study were labeled Bermuda P. O., La., VI-24-05. Specimens were collected from May 24 to August 16 on red clover, soybean, wax myrtle, and other mixed flora. This species was found in the following parishes: Beauregard, Bossier, Caddo, Evangeline, Jefferson Davis, Natchitoches, Red River, St. Helena, St. Tammany, Vernon, and Webster. Under the name of *C. flavida* Say, the grape colaspis was reported to be a vector of bean pod mottle virus (Horn et al. 1970). No specimens are available to confirm this report. It seems more likely that *C. louisianae* was the species involved since it has been collected from soybean fields in 9 parishes and is the more common of the two species reported on this plant.

Colaspis louisianae and *C. brunnea* are very similar in appearance. *Colaspis louisianae* is somewhat larger with 21 males measuring 3.68-4.80 mm in length and 1.92-2.40 mm in width compared to 17 males of *C. brunnea* which ranged from 3.68-4.16 mm in length and 1.92-2.08 mm in width. Blake (1974) stated that only the last antennal segment, and rarely the tenth segment was dark in all the specimens of *C. brunnea* which she examined. *Colaspis louisianae,* on the other hand, was reported to have segments 7, 9, 10, and 11 dark. I found that the color of the antennal segments is not completely diagnostic. Specimens of *C. louisianae* usually have the eleventh segment, all or the apical end of the tenth, and the tip of the seventh segment dark. Most specimens of *C. brunnea* have the eleventh segment and the apical end of the tenth dark, but in some the tip of the seventh segment is also dark. The male genitalia provide the most reliable characters for separating the 2 species. The differences in the external shape of the aedeagi are minor, and the two are best compared side by side. The internal sac of the aedeagus of *C. louisianae* bears a pair of boot-shaped structures which are visible through the wall of the aedeagus (Fig. 1). In *C. brunnea* these structures are much narrower, less heavily sclerotized and are barely visible (Fig. 2). Scanning electron photographs of these structures are shown in Figures 3 and 4. These structures are not boot-shaped in *Colaspis floridana* Schaeffer, the other eastern species in the *C. brunnea* group.

Colaspis recurva Blake: One male was collected in Vernon Parish on May 25 while beating wax myrtle and ornamentals. The median tubercle on the last abdominal sternum is not as strongly recurved as it is in specimens examined from Charleston, SC, but the genitalia are identical. Two females believed to be conspecific were collected May 25 on pine in Sabine Parish.

Colaspis crinicornis chittendeni Blake: This species was misidentified as *C. lata* Schaeffer (Horn et al. 1970) and was reported to be a vector of bean pod mottle virus. These 2 species are very similar, but the aedeagi are different. Males of both species have the hind tibiae dilated, a character which was not mentioned in Mrs. Blake's description of *C. lata*. *Colaspis c. chittendeni* was collected from May 3 to July 1 on corn, red clover, and soybean in 5 parishes. Louisiana records include the following parishes: Avoyelles, Iberia, Iberville, Lafourche*, St. Charles*, St. John the Baptist*, St. Mary, Terrebonne*, and West Baton Rouge.

Colaspis pini Barber: The biology, distribution, and insecticidal control of the pine colaspis in Louisiana were studied by Echols in 1962 (unpublished thesis). He reported this species in 46 of the 57 parishes surveyed.



Figs. 1-2. Male aedeagus, lateral view. 1, *C. louisianae*. 2, *C. brunnea*.

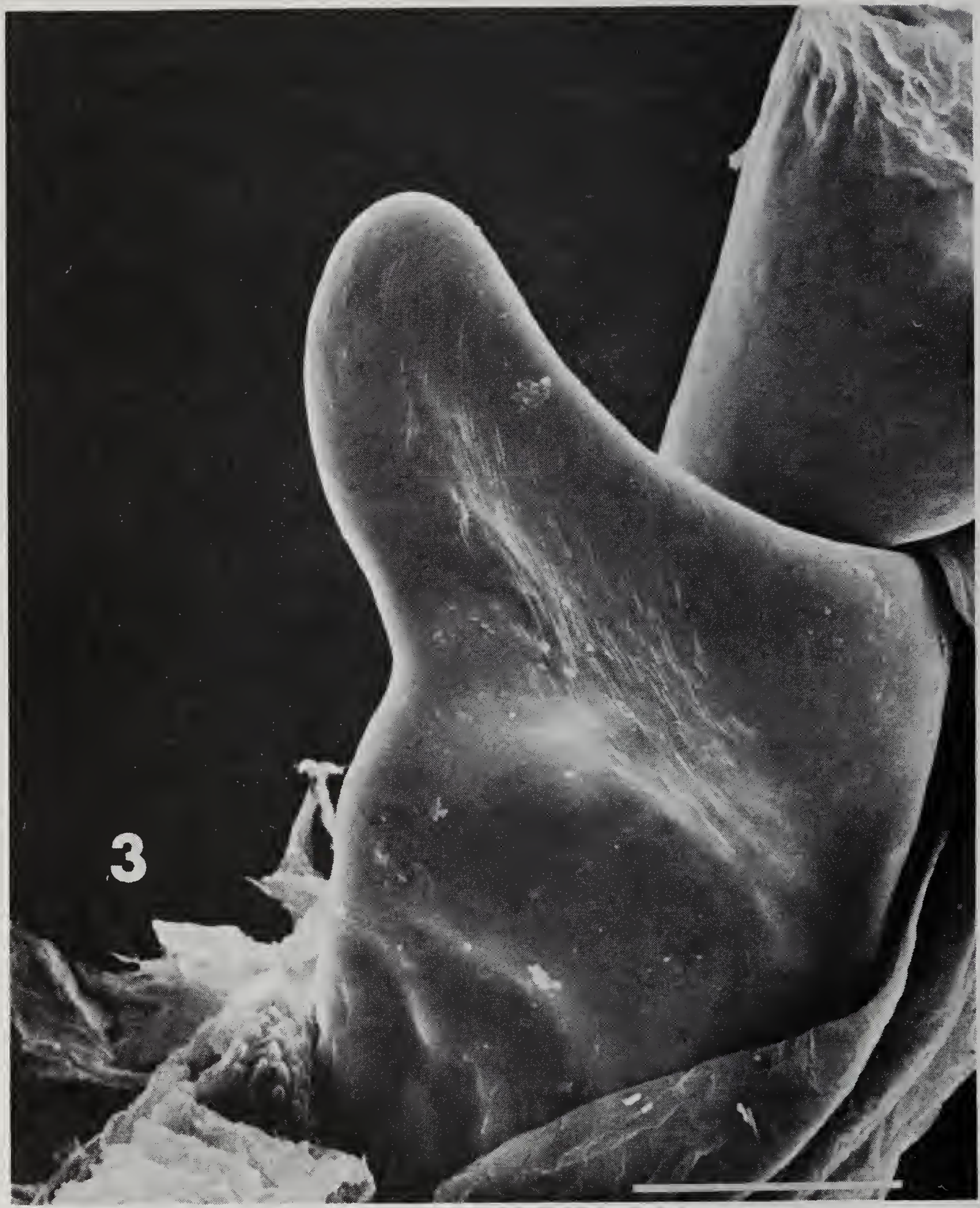


Fig. 3. *C. louisianae.* SEM photograph of a structure located laterally on the internal sac of the aedeagus with the overlying tissue removed. The white line measures 50 μ.

Since only a few of these specimens were available for further study, collections were made from May 13 to June 26, 1977, in 26 parishes. The pine trees sampled were isolated or in small groups and were located in cemeteries, yards, fields, and highway rights-of-way. The genitalia of several males from each parish were examined. All but a few proved to be the pine colaspis. The adventitious specimens were *C. brunnea, C. favosa,* and 3 females believed to be *C. flavocostata* and *C. recurva.* The parish records are as follows: Acadia, Allen*, Ascension, Beauregard, Bossier, Caddo, Calcasieu, Caldwell, East Baton Rouge, East Feliciana, Grant, Jefferson

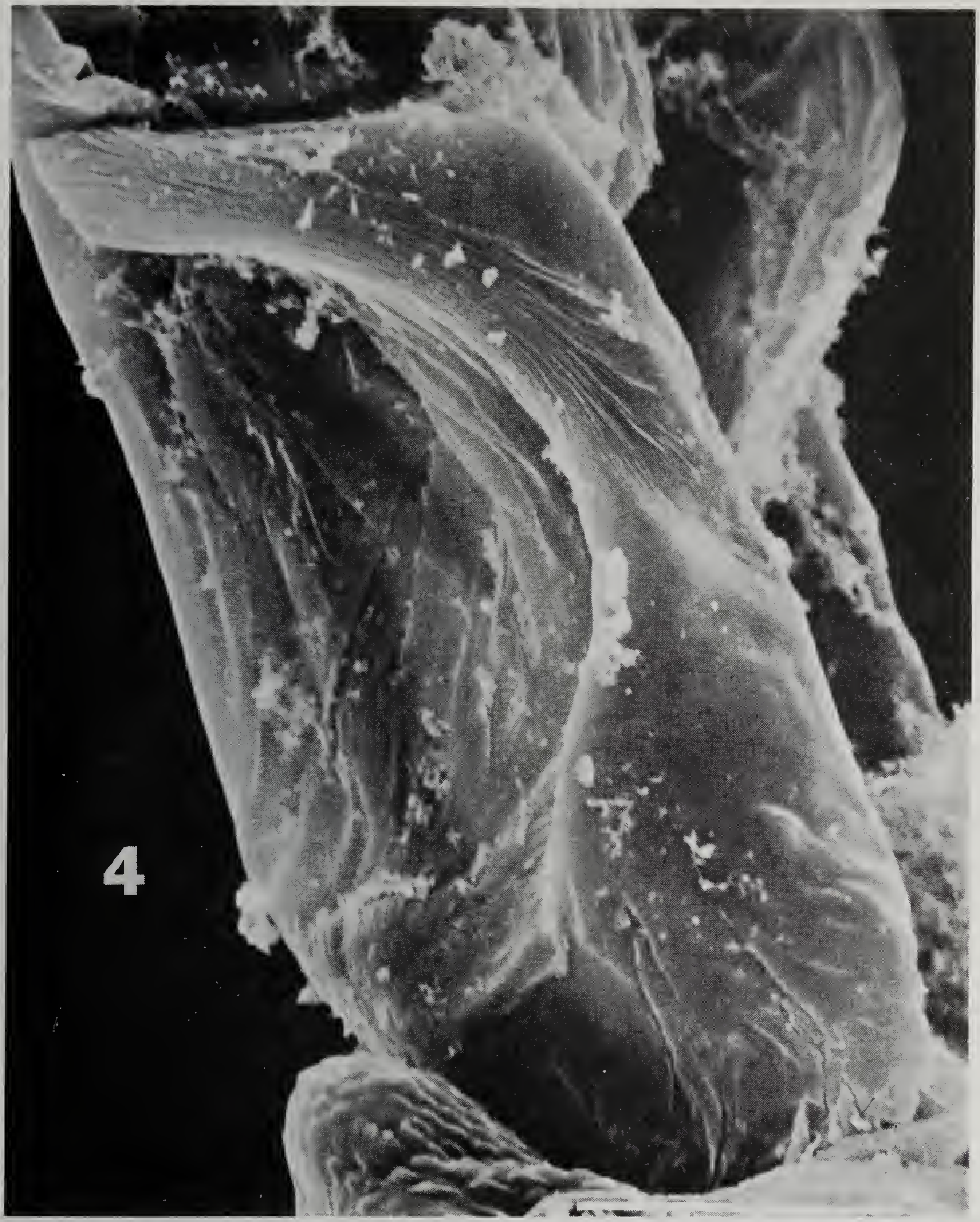


Fig. 4. *C. brunnea*. SEM photograph of a structure located laterally on the internal sac of the aedeagus. The white line measures 50 μ.

Davis, Lafayette, LaSalle, Lincoln, Ouachita, Natchitoches, Rapides*, Sabine, St. Helena, St. Landry, St. Tammany*, Tangipahoa*, Vernon, Washington, Webster, and West Feliciana. Specimens were also examined from Magazine, AR, and Oxford and Woodville, MS.

Colaspis flavocostata Schaeffer: Since this species was reported from Covington in St. Tammany Parish and is very similar to *C. pini* (Blake 1974), I was especially interested in learning if it was represented in my collections. One male and 3 females were collected from wax myrtle and ornamentals on May 25 in Vernon Parish. Another female was beaten from pine on the same date in Beauregard Parish. These females do not closely resemble the pine colaspis. The male is similar to *C. recurva* but the median tubercle on the first abdominal sternum, mentioned by Barber (1936), is not recurved. The aedeagus of the Louisiana male is a little narrower and more pointed at the tip than is the aedeagus of a specimen from Milner, GA, which was compared with the holotype by Barber.

Colaspis costipennis Crotch: Mrs. Blake's record was from Perdicto Beach on pecan. The only specimen in the LSU collection was collected June 25 in Natchitoches Parish on *Tephrosia* sp.

Colaspis favosa Say: This shiny blue green non-costate species was reported from St. Tammany and Tangipahoa Parishes (Blake 1977). Specimens were collected from May 1 to July 31 in Allen, Beauregard, Lincoln, Rapides, St. Tammany, and Vernon Parishes. The series from St. Tammany and Vernon Parishes were collected on wax myrtle, *Myrica* sp.

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